

Office Action Summary

Application No.

10/529,249

Applicant(s)

RAZAVI, ABBAS

Examiner

RIP A. LEE

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21, 23-27 and 32-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 23-27 and 32-41 is/are rejected.
- 7) ☒ Claim(s) 24, 25, 35-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on March 25, 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-846)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 2008/0924
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 1796

DETAILED ACTION

This office action follows a response filed on June 23, 2008. Claims 21 and 39 were amended. Claims 21, 23-27, and 32-41 are pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 21, 23-27, and 32-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Instant claims have been amended to limit the number of substituents R on the Cp ring as integer $n = 1, 2$, or 4. Definition of this structural parameter may be located on page 13, lines 11 and 12 of the specification, which applies to hafnocenes of structure (I) and (II).

Two conditions exist: (i) n is 4 when s is 1, and
(ii) n is 5 when s is 0.

Condition (i) merely indicates where two Cp are connected by bridging group R", four positions on the Cp ring are available for substituent R (because the bridge occupies one ring position). Condition (ii) indicates that when there is no bridging group, the Cp ring has all five ring positions available for substituent R. The specification is devoid of teaching that n can not equal three. Based on these considerations, it is concluded that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Art Unit: 1796

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21, 23-27, and 32-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Instant claims have been amended to limit the number of substituents R on the Cp ring as integer $n = 1, 2$, or 4. Since claims attempt to describe a particular substitution pattern, the definition of n must be precise. The current definition is fatally defective because R has been defined as hydrogen or a hydrocarbyl radical containing from 1 to 20 carbon atoms, or two carbon atoms (apparently from R) are joined to form a C₄-C₆ ring. Thus, it is not clear whether n defines the number of hydrogens, the number of hydrocarbyl radicals, or the number of both hydrogen and hydrocarbyl radicals.

The current definition is also not internally consistent. Since metallocene (II) contains a bridging group, four ring positions are available for substituent R. Thus, integer n is *necessarily* equal to four for *all* substituents R.

The Cp ring of a metallocene is conventionally expressed as (C₅R_nH_{5-n}) where there is delineation of hydrogen and hydrocarbyl substituents, R, on the five membered ring, C₅. For metallocenes containing bridged Cp rings, the Cp ring would be defined as R''(C₅R_nH_{4-n}), where R'' represents the bridging group. This represents a more precise description of Applicant's metallocene (II). If the Cp ring contains only one hydrocarbyl group R, then the Cp ring must contain three hydrogen atoms. Also, if the Cp ring contains only one hydrogen, then the Cp ring must contain three hydrocarbyl groups. Note however, that integer n can not equal three. Thus, the definition provided by Applicant is not internally consistent.

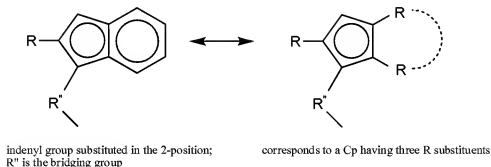
Based on these considerations, the claims as amended are rendered indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Art Unit: 1796

Claim Objections

5. Claim 24 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Instant claim 24 is drawn to a catalyst containing hafnocene (II) in which there is at least one indenyl-type group having at least one non-hydrogen substituent at the 2 or 4-position. As illustrated below, an indenyl ligand containing one non-hydrogen substituent at the 2-position, in terms of the definition of hafnocene (II) provided in independent claim 21, corresponds to a Cp ring containing three R substituents. However, the description of hafnocene (II) provided in independent claim 21 precludes metallocene having this structural feature (because n is 1, 2, or 4 only).



Therefore, claim 24 fails to limit further the subject matter of independent claim 21.

6. Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Instant claim 24 is drawn to a catalyst containing hafnocene (II) in which there is at least one indenyl-type group having two substituents at the 2 and 4-positions. Claim 25 fails to limit further the subject matter of independent claim 21 for the same reasons set forth in previous paragraph 5.

Art Unit: 1796

7. Claim 35 is objected to because of the following informalities: Please rewrite the unit “m²/g” as “m²/g.” Appropriate correction is required.
8. Claims 36-38 are objected to because of the following informalities: Please rewrite the term “wt.%” as “wt %.” Appropriate corrections are required.

Drawings

9. Figure 2 is objected to because the *bis*(imino)pyridyl complex do not contain a double bond between either of the two imino nitrogens and the carbons in the alpha position of the pyridine ring.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 1796

Response to Arguments

10. The rejections of claims under 35 U.S.C. 112, 2nd paragraph, set forth in paragraphs 2-4 of the previous office action dated February 21, 2008, have been withdrawn in light of current claim amendments.

The rejections of claims over Canich *et al.* (U.S. 6,194,341) and Loveday *et al.* (U.S. 6,248,845) have been overcome by amendment. Neither reference discloses a catalyst comprising hafnocene (II) in conjunction with an unbridged zirconocene substituted with at least one bulky substituent or an iron complex of a 2,6-*bis*(imino)pyridyl ligand.

The instant claims are free of the prior art. The only remaining issues are rejections under 35 U.S.C. 112, first and second paragraphs, and objection to claims 24, 25, and 35-38, *vide supra*.

It is noted that interviews were held September 22 and 24, 2008 to resolve the above remaining issues, but a resolution could not be reached.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1796

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Rip A. Lee/
Art Unit 1796

September 25, 2008

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796